

FIG. 1

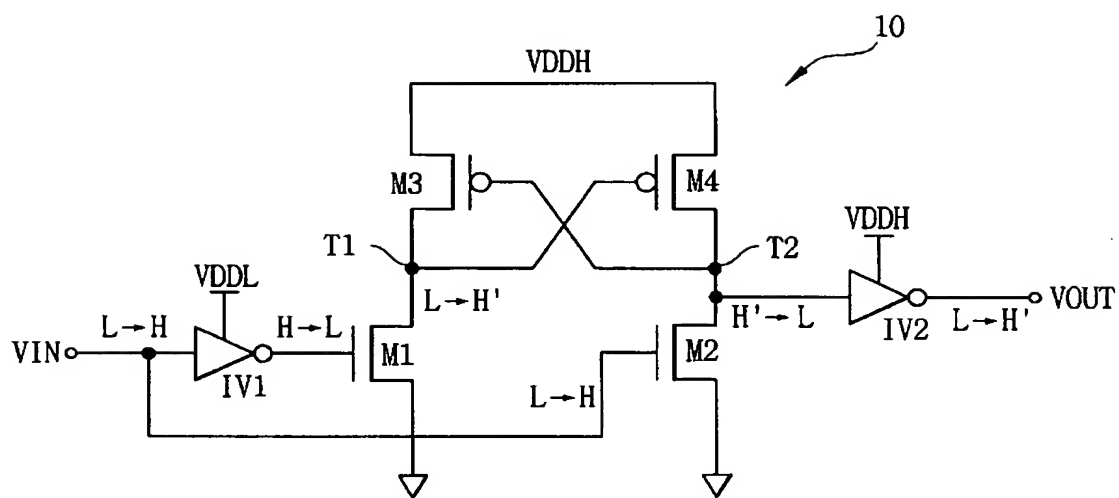


FIG. 2

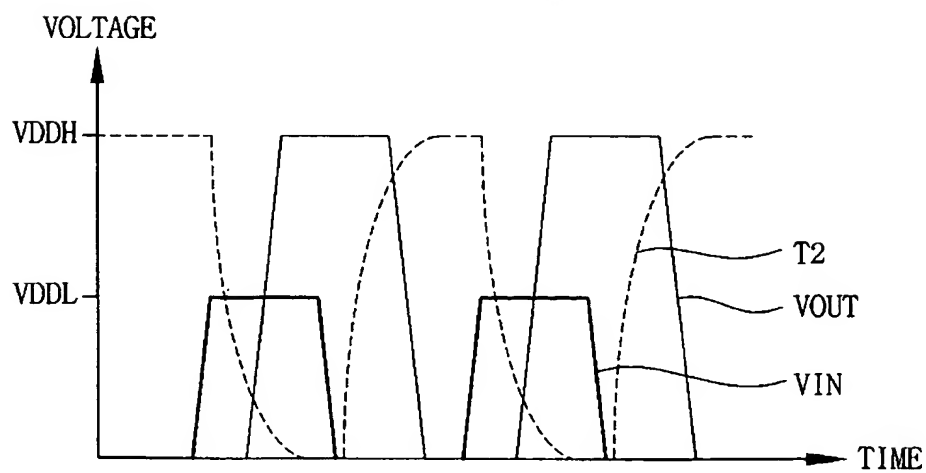


FIG. 3
(PRIOR ART)

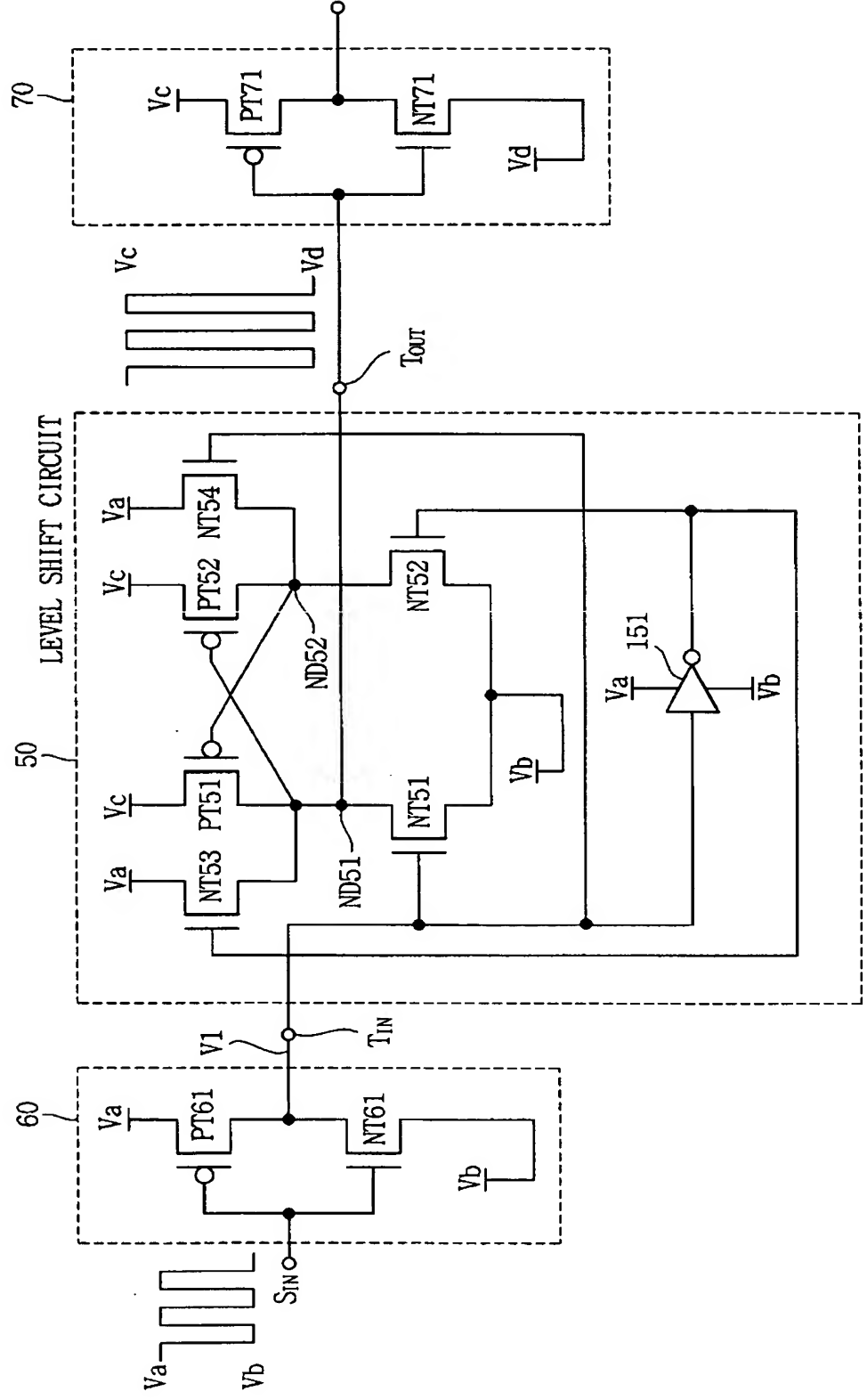


FIG. 4

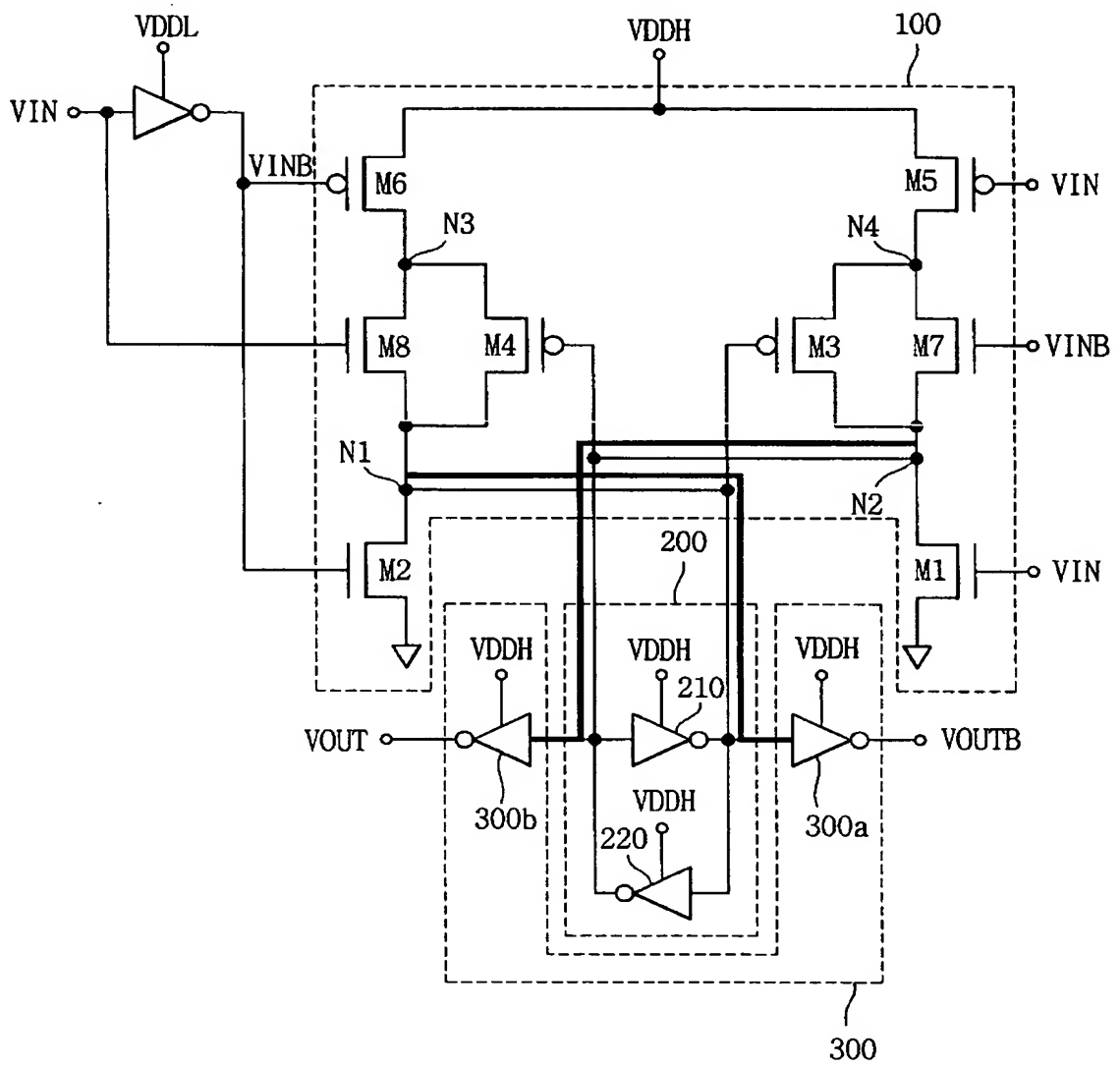


FIG. 5A

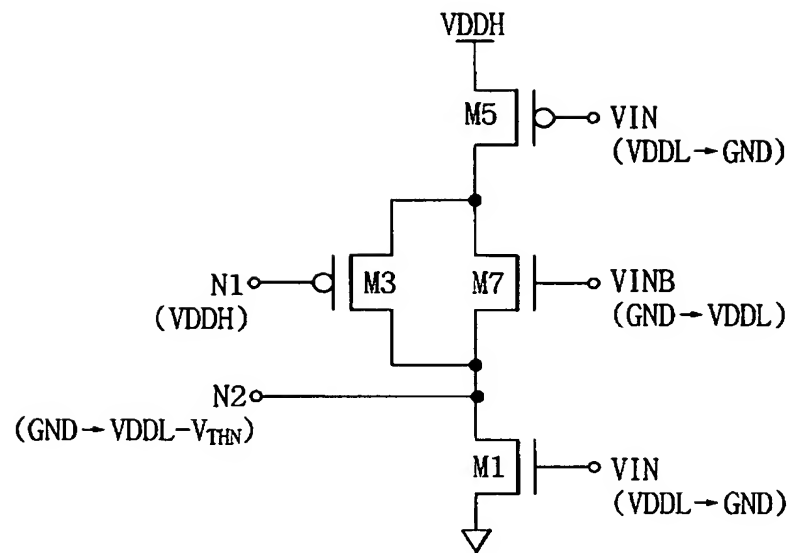


FIG. 5B

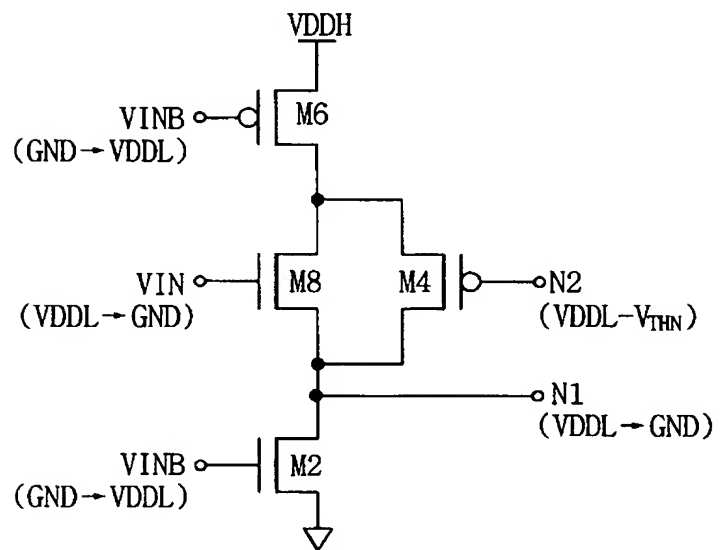


FIG. 5C

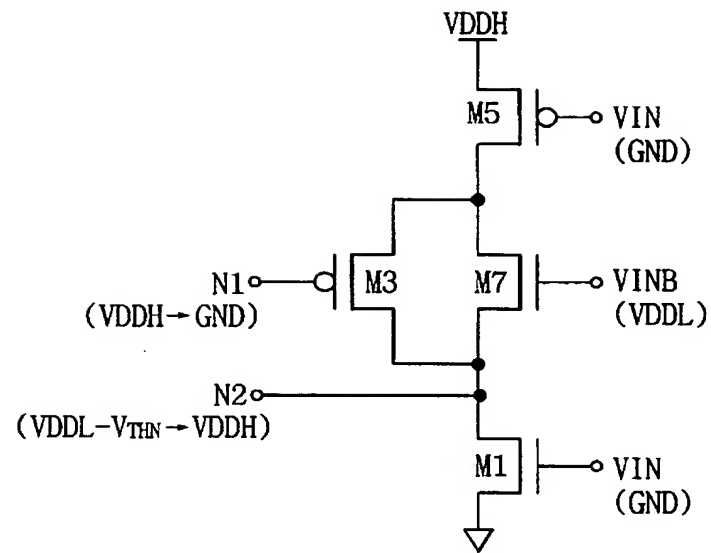


FIG. 5D

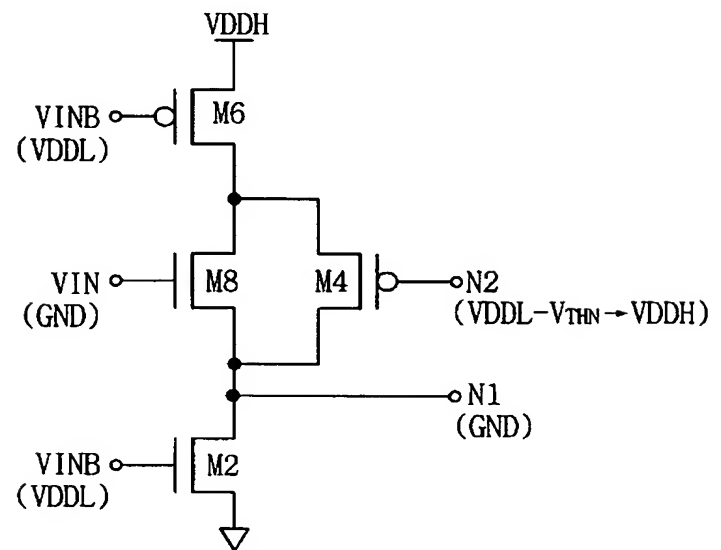


FIG. 6A

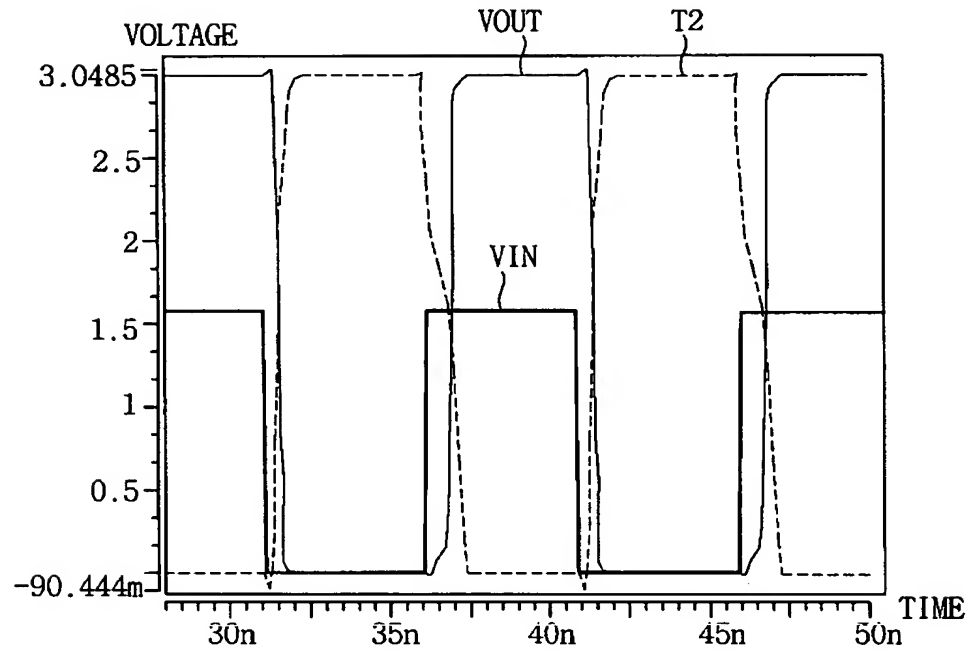


FIG. 6B

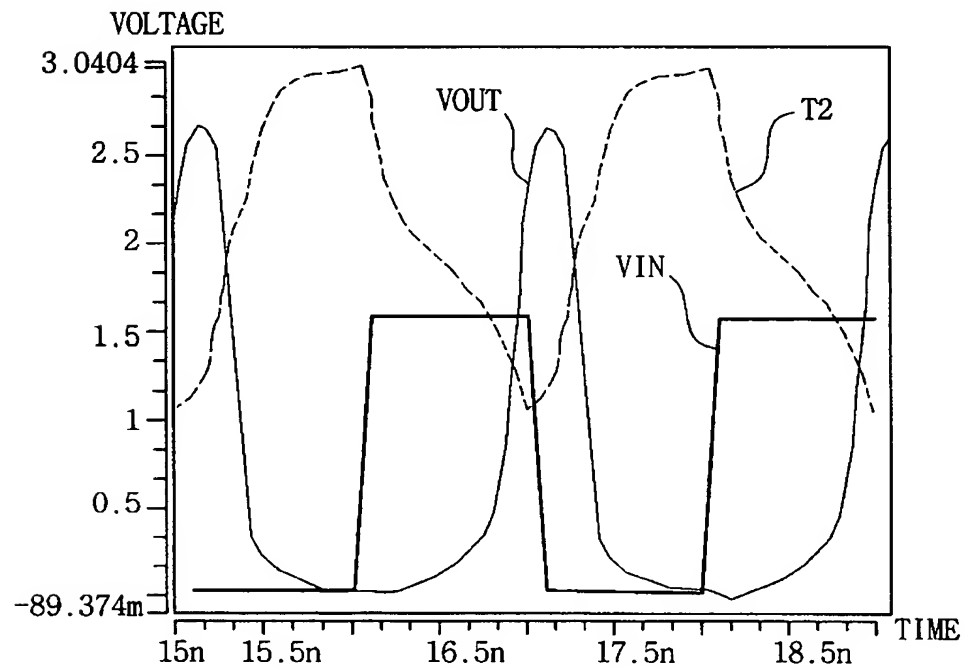


FIG. 6C

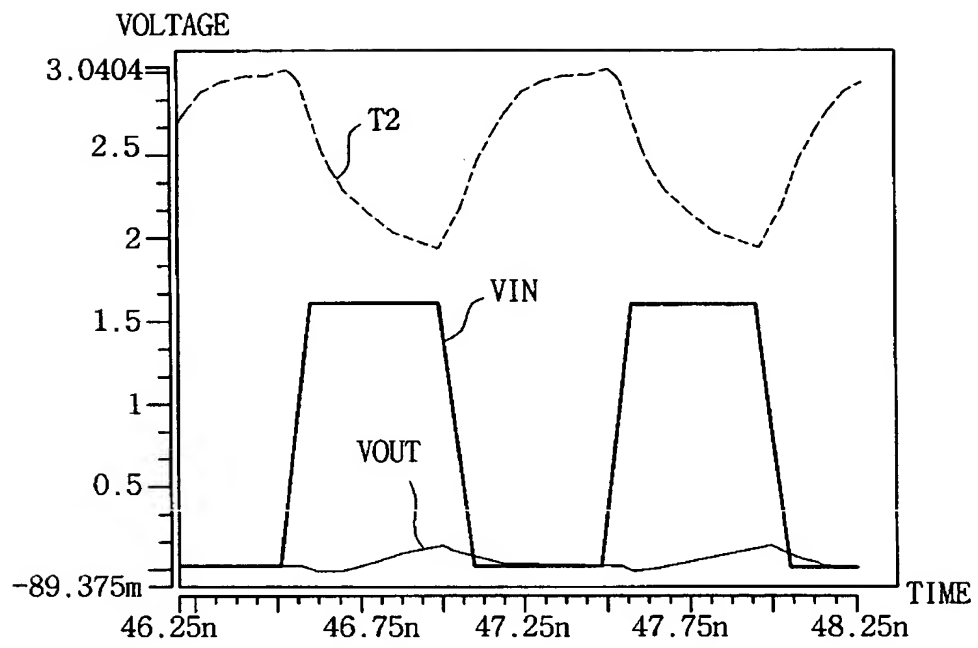


FIG. 7A

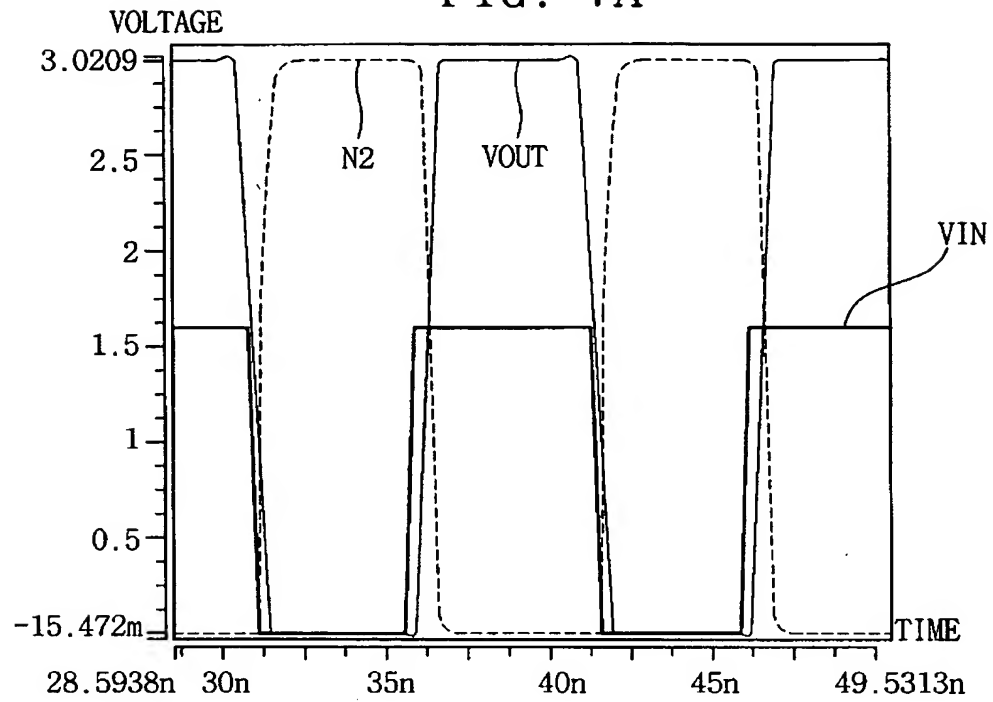


FIG. 7B

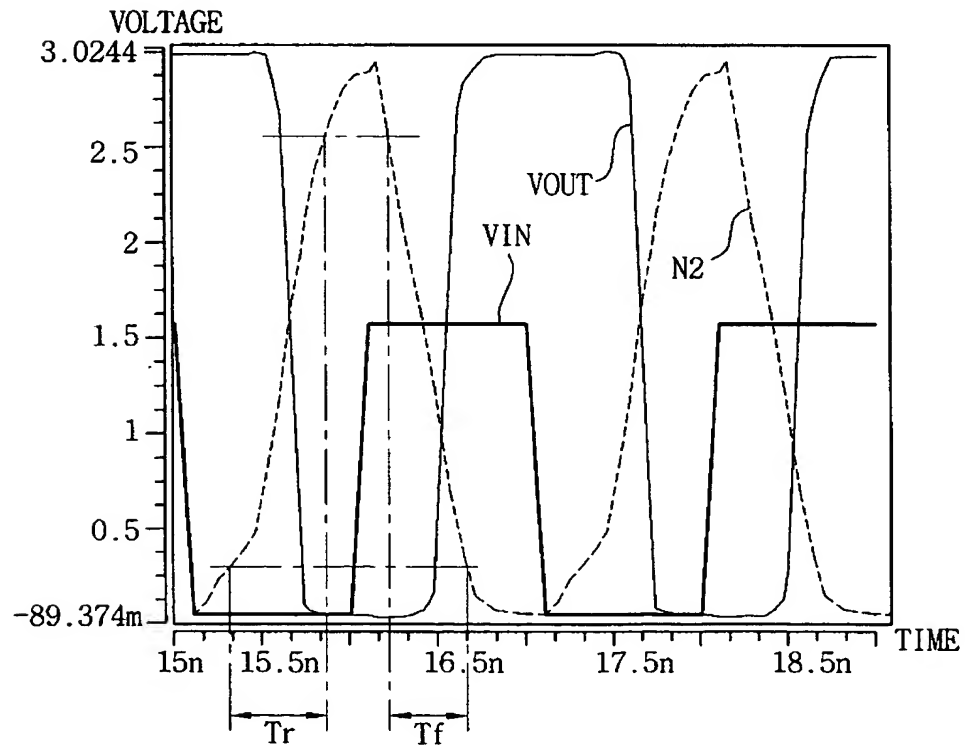


FIG. 7C

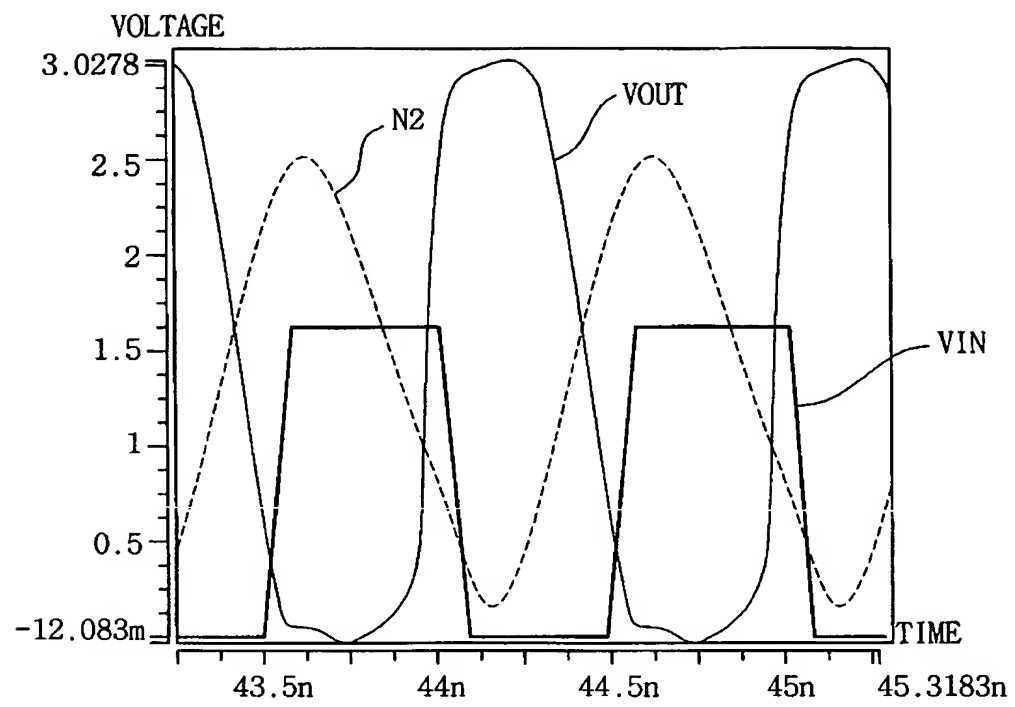


FIG. 8

| | | 10MHz | 100MHz | 500MHz | 1GHz |
|---------------------------|----------------|-----------|-----------|-----------|-----------|
| CONVENTIONAL STRUCTURE | SWING RANGE | 100% | 100% | 89% | 4% |
| | DUTY RATIO | 49.5:50.5 | 46.5:53.5 | 18.3:81.7 | - |
| | CURRENT (VDDH) | 10uA | 85uA | 380uA | 250uA |
| PRESENT INVENTION | SWING RANGE | 100% | 100% | 100% | 100% |
| | DUTY RATIO | 49.9:50.1 | 49.0:51.0 | 48.5:52.0 | 51.2:48.8 |
| | CURRENT (VDDH) | 16uA | 174uA | 737uA | 1089uA |

FIG. 9

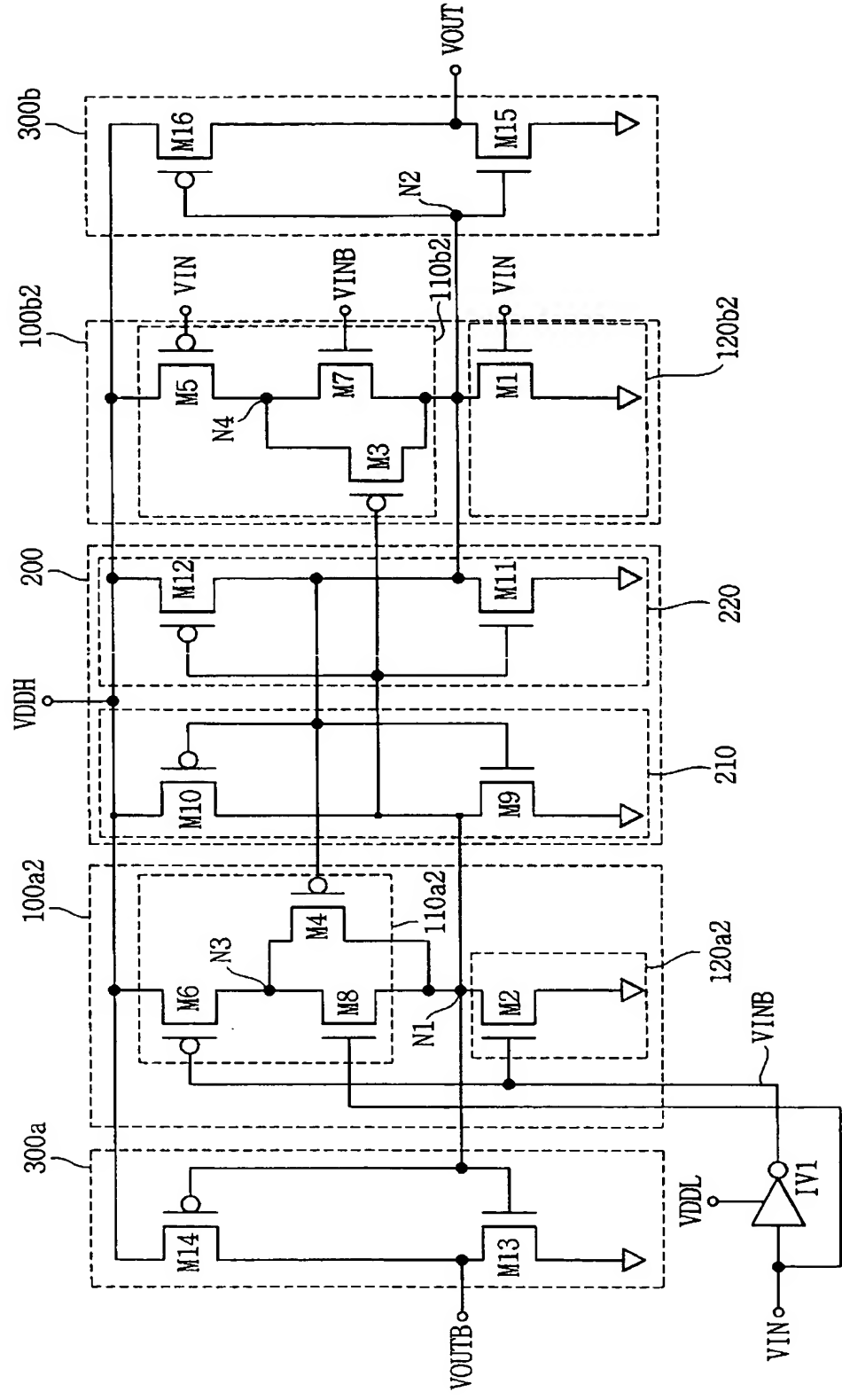


FIG. 10

